Upper Skagit Indian Tribe
319 Project Overview
Linking Success on Red Creek

Location Overview

Location Overview

Overall Project Goals

- Underlying Geology
  - Lyman Hill=Glacial Kitty Litter (Sediment=NPS)
  - Unstable banks with history of logging
  - Hanson/Red watershed has had an 83%loss in smolt production (Priority Watershed)
- Blocking culverts with poor stormwater controls
- Lack of stream complexity to mitigate sediment transport
- Lack of riparian vegetation to secure sediment input and create shade (temp. is NPS too!)
- Lack of salmon habitat complexity

Project Segments

- Helmick Reservation
  - Upper Red Creek, Nuwha-Ah Culvert, Mid Red
- Lower Red Creek
  - Helmick Bridge, NSRA, Private Parcels
- Hansen Creek (future focus)
  - NSRA – alluvial fan, Private Parcels

Upper Red Creek Stretch

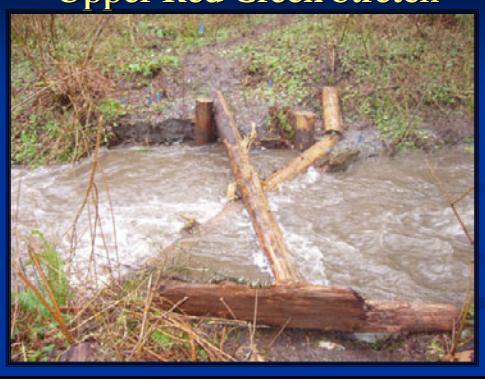
- Unstable banks contributing mass wasting of sediment to Red Creek
  - Placement of LWD to divert thalweg away from unstable slopes and to disrupt stream energy
  - Revegetate with native plants to anchor bank and control invasives
  - Improves salmon habitat
  - Completed Summer '05

Upper Red Creek Stretch

Upper Red Creek Stretch

Upper Red Creek Stretch

Upper Red Creek Stretch



Upper Red Creek Stretch

NuWha-Ah Lane Culvert Replacement

- Combined 319, BIA Roads and Hatchery Reform Dollars (Completed Summer '04)
  - Remove perched box culvert (partial fish barrier) and replace with bottomless culvert
  - Remove diversion weir that was primary supply for the USIT hatchery and replace with infiltration gallery
  - Add proper stormwater runoff controls to manage road runoff and filter NPS pollutants
    - Catchment and filtration
  - Revegetate construction area with native plants to control sediment input, provide shade and control invasives

NuWha-Ah Lane Culvert Replacement

NuWha-Ah Culvert Culvert Replacement

NuWha-Ah Lane Culvert Replacement

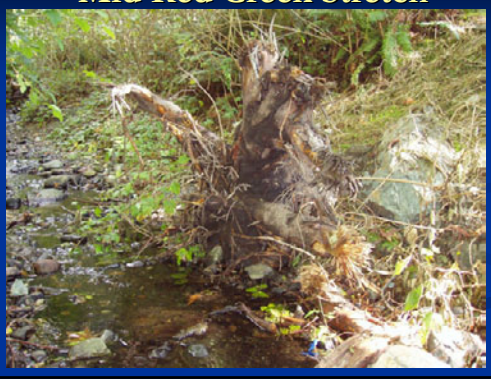
Mid Red Creek Stretch

- Combined 319 and Cyclical Hatchery Maintenance funding (Completed Summer '06)
- Replace failing secondary hatchery water supply with fish friendly system
- Add 7 Rootwads to provide bedload sediment stability and storage capacity as well as anchor unstable banks; creates salmon habitat
- Replant riparian zone with native vegetation to control NPS sediment delivery into stream, provide shade and manage invasives

Mid Red Creek Stretch

Mid Red Creek Stretch

Mid Red Creek Stretch



Helmick Road Bridge

- Combined 319, County, State, and Tribal dollars
  - Remove perched culvert that has completely blocked salmon passage for at least 40 years
  - Remove sediment deposits on upstream side and reestablish natural stream channel and gradient
  - Placed more than 20 rootwads to control headward erosion, bedload sediment transport and create salmon habitat
  - Replant with native vegetation to provide shade, control sediment input and manage invasives

Helmick Road Bridge

Helmick Road Bridge

Helmick Road Bridge

Helmick Road Bridge

Helmick Road Bridge

- Project is ongoing
  - Stream is reconnected and flow is returning
  - Planting to commence Fall '06 and Spring '07
  - Roadwork largely complete by end '06
  - Bridge may be complete by early '07
- Coho exploring ¾ mile of previously blocked habitat late Fall '06?

Northern State Recreation Area

- Combined 319 (2), County and Tribal dollars
  - Helmick Road Safety Improvements
  - Restoration of Red Creek and Dairy Tributary channels through reed canary grass pasture
  - Placement of LWD to mitigate sediment transport and create salmon habitat
  - Addition of spawning gravel to creek channels
  - Exclusion of livestock via fencing placement
  - Replanting with native vegetation to control sediment input, provide shade and manage invasives

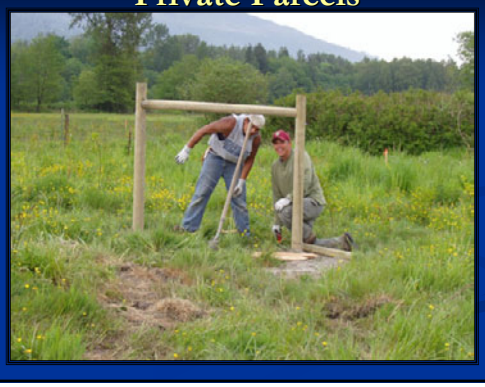
Northern State Recreation Area

Northern State Recreation Area

Private Parcels

- Combined 319 (2), County dollars
  - Conservation easement acquisition
  - Exclusion of livestock via fencing placement
  - Replanting with native vegetation to control sediment input, provide shade and manage invasives

Private Parcels



Northern State Recreation Area

NSRA & Private Parcels

- Projects are ongoing
  - Burning of Reed Canary Grass yet to occur (any time)
  - Additional planting to occur along both sides of new channel (Spring '07)
  - Continue private parcel riparian restorations
  - Continue to address partial fish passage barriers

Accomplishments

- Approximately 3700 feet of Red Creek and 1200 feet of Dairy Tributary worked on since the Summer of 2004
  - 3000 feet of channel restored
  - 3 fish barriers removed (restored access to ¾ mile of coho habitat)
  - A LOT of LWD placed
  - Tens of Thousands of riparian plants installed
- Natural stream processes restored in a priority watershed
- Nonpoint pollution controlled (Sediment and temperature)

Partnership Lessons

- Why
  - Environmental attention on what has become a priority watershed (since 90's)
  - Watershed Management Plan, jurisdicitionally adopted and supported by agencies & tribe(s)
  - Key financial benefits
- Useful aspects
  - Flexibility to project
  - Strength of government to government collaboration for leveraging resources

Funding Lessons

- Budgets
  - Accuracy has been lacking from preliminary estimates through implementation
    - Underlying basis for preliminary budget changed
    - Delays that add up to years – property, materials, construction, permitting; costs increase
  - Leveraged 319 with in-house and external partners:
    - Roads, Safety, Scenic Byways, Hatchery, NPS, CCWF monies

Take Home Lessons

- Pitfalls – just don't get too excited by them
  - Political, contract, engineering, etc. delays
- Technical Assistance Improvements
  - Block and or accumulate overtime funding contributions to better improve planning, and increase funding partners
    - Improved funding duration creates opportunity watershed scale approach rather than small scale and potentially disjointed projects
- What worked
  - Flexibility of funding agencies;
    - work plan changes & completion dates
  - Excellent contractors
  - Flexibility with project partners

Keeping the Goals In Mind